

An Overview of Forest Health and Forest Thinning Projects that Produce Biofuels and Power

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Topics to be Discussed

1. Forest health conditions
2. Forest thinning treatments

The Problem?



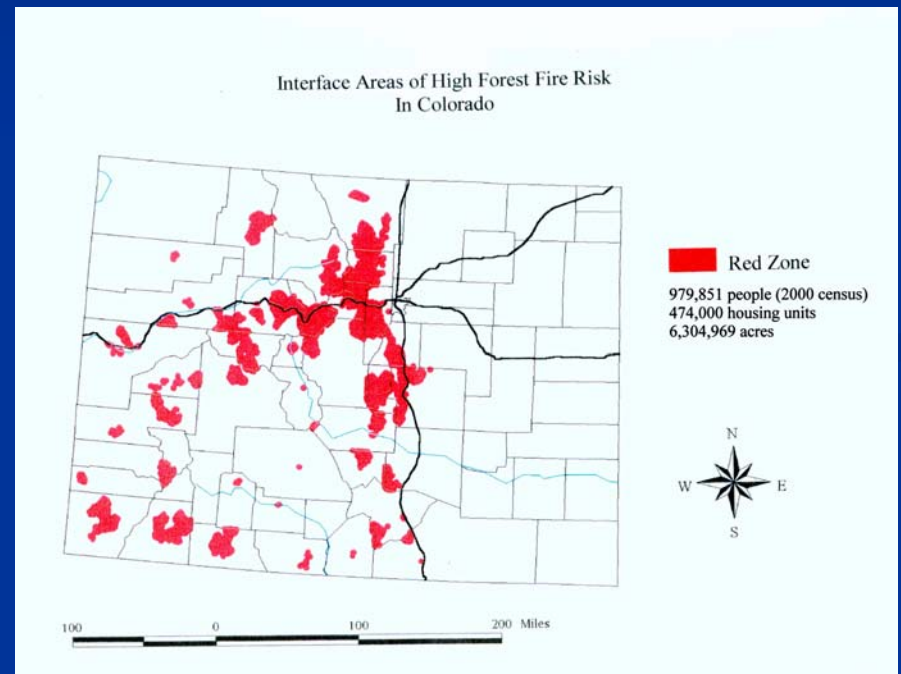
Why We Should Be Concerned?

- Risk of catastrophic fire
- Insect and disease issues
- Ecological considerations



Colorado “Red Zone”

- 6.3 million acres at high risk of catastrophic fire.
- 2.4 million acres at high risk along the Colorado Front Range.



Wildfire Costs



Hayman Fire Costs

- **Data compiled by Denny Lynch**
- **June 8 – July 18, 2002**
- **137,759 acres burned**
- **Costs to date:**
 - **Direct costs = \$135.6 million**
 - **Rehabilitation costs = \$76.7 million**
 - **Impact costs = \$2.9 million**
 - **Total costs = \$215.3 million (\$1,562 per acre)**



Who benefits from healthier forests that are less susceptible to catastrophic fire?

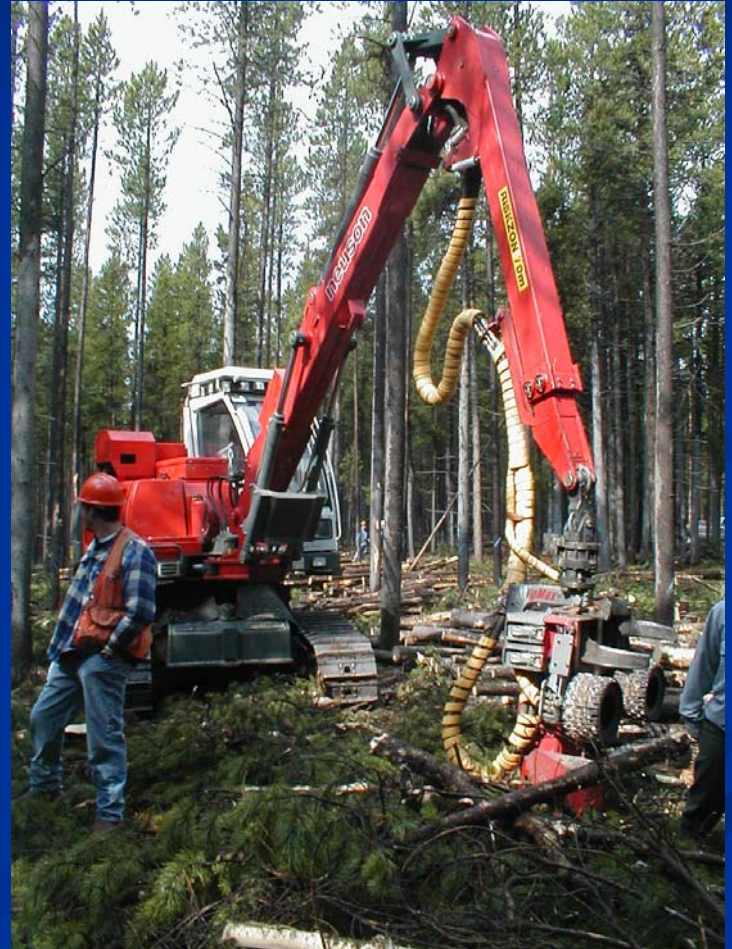
- Private land owners and tree farmers
- Government agencies
- Outdoor/recreational users
- Regional tourist industry
- Water utilities and users
- Electric Utilities (reduced threats to T&D lines)
- Local wood products companies
- General Public

Forest Thinning Projects



Harvesting Methods

- Generally, harvesting methods fall into two categories
 1. Projects where fuels are left at the site
 2. Projects where fuels are removed from the site



Projects where Fuels were Left on Site



- Lop and scatter
- Chip blown back on forest floor
- Mastication (Example: Hydro-ax)

Heil Ranch 1

Felling:	Hand falling with chainsaws
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Primary transport:	Hand pull to chipper
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Removal/utilization:	Lop and scatter 6.5 acres Chip 6 acres Vermeer BC1230A
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Acreage:	12.5 Acres
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Average Slope:	10 %,
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Maximum slope:	15 %
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Cost Per Acre:	\$572.14
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Projects where Fuels were Left on Site (Summary)



- Cost ranges from \$100 to \$500 or more per acre
- Handling increases cost

Projects where Fuels were Removed from the Site

- Costs range up to \$1000 or more per acre
- Biomass used for products, which can help offset costs



Air Force Academy Project

- 136 Acres treated
- Work done by Morgan Timber Products
- Treatment cost was \$679.00 per acre
- Bid influenced by the potential to utilize material for products
- Products removed included:
 - 14 loads of long logs
 - 5.5 loads of 8' bolts
 - 19 loads of wood chips









Economics of Removing Small Diameter Trees: Summary

- Costs vary by ecological prescription, forest and terrain conditions, and the availability of wood markets.
- Costs for Front Range projects where some revenue was generated from the wood removed ranged up to \$1000 or more per acre.
- Treatment costs for projects where wood was left in the forest are less.
- There appears to be no single optimal treatment system for fuel reduction on sites found in the ponderosa pine zones of Colorado.

Barriers to Implementing Forest Thinning Projects

- Opposition of certain environmental groups to fire mitigation work and forest restoration thinning
- Economics of harvesting small diameter trees
- Inability to access wood markets (particularly value-added markets) with products produced from small diameter material
 - Real and perceived quality issues
 - Lack of infrastructure
 - Inconsistent wood supply
 - Unwillingness of industry to invest capital given past history of wood supply
- Lack of trained workforce

Conclusion

- Significant portions of Colorado forest's are susceptible to insect and disease attack, and conditions remain favorable for catastrophic wildfire
- Forest restoration thinning and hazardous fuel reduction work can mitigate these conditions, but treatment costs run \$1000 or more per acre
- Significant barriers still exist to implementing thinning projects on a landscape scale



Colorado Wood Utilization & Marketing Assistance Center - Contact Information

➤ Webpage (www.colostate.edu/programs/cowood)



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